

IN THE SPECIFICATION:

Please amend the following paragraphs as indicated:

[0020] In one exemplary embodiment, the system may include an ambient light sensor configured to generate information indicative of the intensity of ambient light present in the vicinity of the light engine and/or the viewing surface. This information may include the intensities of individual components of light such as red, green, and/or blue or it may ~~includes~~ include some composite luminance value. In one exemplary embodiment, the ambient light sensor allows for automatic adjustment of a turn-on threshold for the screen pixel elements so that the screen pixel elements respond only to projected light with an intensity greater than the intensity of the ambient light.

[0026] The term “light engine” will be used herein and in the appended claims to refer to a front projector or any other display system configured to display an image on a screen with a contrast ratio that may be affected by ambient light. The image may be displayed on a contrast enhancing screen or any suitable viewing surface. The term “image” will be used herein and in the appended claims, unless otherwise specifically denoted, to refer broadly to a still image, series of images, motion picture video, or anything else that is displayed by a light engine.

[0029] Alternatively, the color device (102) may be a “parallel” color device such as an arrangement of dichroic mirrors that split the light into primary colored light, such as red, green, and blue light.

[0040] Fig. 3 illustrates a spectrum of exemplary gray scale levels according to an exemplary embodiment. The gray scale levels of Fig. 3 are illustrative and it will be recognized that there may be more or less fewer levels of gray scale as best serves a particular light engine. As shown in Fig. 3, the first gray scale level (130) is completely black. A completely black gray scale level corresponds to a pixel that is in the “off” state during an entire frame (i.e. the pixel’s corresponding SLM micromirror or element is in the “off” position). As shown in Fig. 3, the gray scale levels increase in brightness until the last gray scale level (131). The last gray scale level (131) is white and corresponds to a pixel that is in the “on” state during an entire frame (i.e. the pixel’s corresponding SLM micromirror or element is in the “on” position during the entire frame). The gray scale levels in between the first and last gray scale levels (130, 131) may be generated by varying the amount of time within a given frame that the pixel is “on.”

[0051] Fig. 9 is a flow chart illustrating a method of eliminating or reducing the visual effects of the sharp discontinuity (144; Fig. 8) at the edge of the black region (140; Fig. 8) and the gradual shading region (141; Fig. 8) caused by ambient light. The method comprises using a spatial and/or temporal dithering pattern to generate gray scale levels for some or all of the pixels to be displayed in the gradual shading region (141; Fig. 8). The dithering method allows the gradual shading to be generated by an arrangement, sequence, and/or “checkerboard” pattern of “on” and “off” pixels. The dithering pattern may change from frame to frame based on the intensity of ambient light and projected light incident upon the screen pixel locations on the screen (105; Fig. 5).

[0057] Once the dithering algorithm has been selected, the dithering algorithm is used to generate apparent gray scale levels for some or all of the pixels to be displayed in the ~~in the~~ gradual shading region (141; Fig. 6) (step 196). By generating apparent gray scale levels for some or all of the pixels in the gradual shading region (141; Fig. 6), the sharp discontinuity (144; Fig. 8) caused by ambient light may be eliminated or its visual effects may be reduced. The term “apparent gray scale level” will be described below.